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## I. Executive Summary

### Overview:

The Mekoryuk Clinic, built in 1991, is a 970 SF clinic of somewhat typical design for the time it was constructed. It was originally built as a 28 x 33 ft portion of a larger 28 x 64 building that also houses the tribal offices, VAEC office, and storage areas. It does not have any vestibules on the facility and the arrangement is very difficult with the main exam room accessible through the other exam/office space, narrow corridors and no privacy from public tribal offices. It has very small waiting area, a larger exam room, one other main office/exam room, toilet, access to public kitchen, TDY room, medical files/pharmacy/medical supply room, janitor/water storage, small storage, and small joint mechanical room. The simple wood frame construction on a post and pad system over a gravel pad is similar to many clinics constructed in the YKHC region over the last 20-30 years. It has been modified due to heating problems with all exposed internal piping, and is small for the current size of the village, 210 residents.

### Renovation/Upgrade and Addition:

The Clinic will require a 1019 SF addition to accommodate the current need and Alaska Rural Primary Care Facility space guidelines. This addition is possible on the existing site; however, it will be tight with proximity to property line. The addition would require additional pad filling and substantial renovation of the existing clinic. As can be seen from the documentation enclosed, the existing clinic will require major renovation to meet current code and standards as well. The cost of renovation and addition will far exceed the cost of a new clinic facility.

### New Clinic:

The community has proposed that a new larger 2000 SF Denali Commission Medium Clinic can be constructed on a new site, of which there is a single logical choice. We have included a preliminary site plan near the existing washeteria and all utilities.

The site has existing utilities available and can be served easily. The Tribal Chairman of Mekoryuk, Howard Amos, is in process of final site selection and should have this complete in the next couple months.

The community has completely supported this effort and have met extensively to assist in new site issues and to resolve any site considerations of the three options presented.

## **II. General Information**

### **A. The Purpose of the Report and Assessment Process:**

ANTHC has entered into a cooperative agreement with the Denali Commission to provide management of the small clinic program under the Alaska Rural Primary Care Facility assessment, planning, design and construction. Over 200 clinics will be inspected through the course of the program. The purpose of the Code and Condition survey report is to validate the data provided by the community in the Alaska Rural Primary Care Facility Needs Assessment and to provide each community with a uniform standard of evaluation for comparison with other communities to determine the relative need between the communities of Alaska for funding assistance for the construction of new or remodeled clinic facilities. The information provided in this report is one component of the scoring for the small clinic RFP that the Denali Commission sent to communities in priority Groups 3 and 4. The information gathered will be tabulated and analyzed according to a set of fixed criteria that should yield a priority list for funding. Additionally, the relative costs of new construction vs. remodel/addition will be evaluated to determine the most efficient means to bring the clinics up to a uniform standard of program and construction quality.

A team of professional Architects and Engineers traveled to the site and completed a detailed Field Report that was reviewed by all parties. Subsequently, the team completed a draft and then final report of the facility condition.

### **B. Assessment Team:**

Tom Humphrey, Capital Projects Director, and Emilee Kutch, the administrator for Yukon Kuskokwim Health Corporation, organized the assessment team. The team for this site visit was Tom Humphrey, YKHC; Gerald L. (Jerry) Winchester, Architect, Winchester Alaska, Inc.; Bob Jernstrom, PE, Jernstrom Engineering, and Matt Dixon, ANTHC. Team members who assisted in preparation of report from information gathered included members of the field team above and Ben Oien PE, Structural Engineer; Tom Humphrey, PE, Electrical Engineer; Carl Bassler PE, Civil Engineer; and Estimation Inc.

### **C. Report Format:**

The format adopted is a modified "Deep Look" format, a facilities investigation and condition report used by both ANTHC and the Public Health Service, in maintaining an ongoing database of facilities throughout the country. Facilities are evaluated with respect to the requirements of the governing building codes and design guidelines. Building code compliance, general facility condition, and program needs have been evaluated. The written report includes a floor plan of the clinic, site plan as available and new plans for renovation/upgrade or completely new clinics. Additional information was gathered during the field visit which includes a detailed Field Report and building condition checklist, sketches of building construction details, investigations of potential sites for new or replacement clinics, and proposed plans for village utility upgrades. This information is available for viewing at ANTHC's Anchorage offices and will be held for reference.

### **D. The Site Investigation:**

On November 27, 2001, the team flew to the site and made observations, took photos, and discussed the needs with on-site personnel for the facility. Approximately three-four hours was spent on site, with sufficient time to investigate foundations, structure, condition, mechanical and electrical systems, and to interview the staff to assess current and projected health care needs.

Interviews were conducted with the Tribal Chairman, Howard Amos; Debby David, CHA; Louise Moondancer, CHAP; Harriet Shavings, CHP; Sally Whitman, HA. The tribal staff provided information on the existing building, site, and utilities. Additional review of existing data from YKHC files from physician's assistants, community health aides, travel clerks, dentists, specialty clinic providers, and medivac teams. These interviews provided clear understanding of the needs of the village, the clinic facility, and the users of the facility.

The Mekoryuk Tribal Chairman has reviewed the use of a Denali Commission Medium Health Clinic design adapted to the Mekoryuk Site. He has agreed to proceed with final approvals of a site based on final determination of the most appropriate one.

### III. Clinic Inspection Summary

#### A. Community Information:

Population: 210 (2000 Census)

2<sup>nd</sup> Class City, Unorganized Borough, Lower Kuskokwim School District, Calista Native Corporation

Location:

Mekoryuk is at the mouth of Shoal Bay on the north shore of Nunivak Island in the Bering Sea. The Island lies 30 miles off the coast. It is 149 air miles west of Bethel and 553 miles west of Anchorage. Mekoryuk is part of the Yukon Delta National Wildlife Refuge. It lies at approximately 60d 23m N Latitude, 166d 11m W Longitude. (Sec. 31, T004N, R097W, Seward Meridian.)

Mekoryuk is located in the Cape Nome Recording District. The area encompasses 7.4 sq. miles of land and 0 sq. miles of water. The Bering Sea which surrounds Nunivak Island strongly influences the climate of the island. Foggy and stormy weather are frequent. Average precipitation is 15 inches; annual snowfall is 57 inches. Summer highs average 48 to 54; winter highs run 37 to 44. Extremes have been recorded from 76 to -48.

History:

Nunivak Island has been inhabited for 2,000 years by the Nuniwarmiut people, or Cup'ik (Choop'ik) Eskimos. The first outside contact was in 1821 by the Russian American Company, who recorded 400 people living in 16 villages on the Island. A summer camp called "Koot" was noted at the current site of Mekoryuk in 1874. In 1891, Ivan Petroff found 702 Eskimos in 9 villages, including 117 people at "Koot." An epidemic in 1900 decimated the population, leaving only four surviving families in the village. In the 1930s, the Evangelical Covenant Church was built by an Eskimo missionary, followed by a BIA school in 1939. People moved to the village from other areas of the Island to be near the school. Reindeer were introduced for commercial purposes in 1920 by an Eskimo-Russian trader. The operation was purchased by the BIA in the 1940s and a slaughterhouse was constructed in 1945. The reindeer were crossed with caribou from Denali Park; the resulting animals are larger and harder to handle than other reindeer in the state. 34 musk-ox from Greenland were transferred to the Island in 1934 in an effort to save the species from extinction. Today, the musk-ox herd numbers around 500, and calves from this herd have been relocated and introduced to other areas of Alaska. A post office was opened in 1940. In the 1940s, the women lived in semi-subterranean sod houses and the men stayed at one or more

"kasigi", or men's community houses. At that time, traditional ceremonies and religious beliefs were still practiced. The 50s and 60s brought considerable change. An airstrip was built in 1957, and the Territorial Guard was formed. Men went to Fort Richardson near Anchorage for training. By this time, Mekoryuk was the only permanent community on the Island. During this time, many families moved to Bethel to be near the high school, returning during late Spring for fishing and sea mammal hunting. The City was incorporated in 1969. A high school was constructed in 1978

**Culture:**

This Cup'ik Eskimo village maintains reindeer and musk ox herds, and practices a subsistence lifestyle. The sale, importation or possession of alcohol is banned in the village.

**Economy:**

Employment by the school, city, village corporation, commercial fishing, construction projects, and services prevails. The Bering Sea Reindeer Products Co. is a major employer. Trapping and crafts, such as knitting qiviut (musk ox underwool), provide income to many families. 52 residents hold commercial fishing permits, most for halibut and herring roe. The village operates a freezer for commercial and subsistence catches. Almost all families engage in subsistence activities and most have fish camps. Salmon, reindeer, seal meat and oil are important staples.

**Facilities:**

Water is derived from a well, is treated and stored in a tank. A new flush/haul system currently serves about 90% of homes. Funds have been provided to complete the remaining homes which use honeybuckets. The school has its own well, and needs a new water treatment system. The washeteria has piped disposal to a new sewage lagoon.

**Transportation:**

Mekoryuk relies heavily on air transportation for passenger, mail and cargo service. A State-owned 3,070' gravel runway allows year-round access. A breakwater protects the shoreline from Bering Sea waves. Barges deliver goods from Bethel once or twice each summer. Boats, snowmachines and ATVs are used for travel within the community.

**Climate:**

The Bering Sea which surrounds Nunivak Island strongly influences the climate of the island. Foggy and stormy weather are frequent. Average precipitation is 15 inches; annual snowfall is 57 inches. Summer highs average 48 to 54; winter highs run 37 to 44. Extremes have been recorded from 76 to -48.

## **B. General Clinic Information:**

**Physical Plant Information:**

The existing Mekoryuk Health Clinic completed in 1991 occupies 970 sq. ft. (See attached Plan) It is one of the medium size clinics constructed during the last twenty years and existing in the YKHC program area. It has small a waiting room, toilet, janitor/supply room, exam room, one other office/exam room, a small supply storage area, access to kitchen, TDY, pharmacy/medical supply

storage, and a joint mechanical room. It has a front entry with no vestibule and does not allow stretcher access. The rear entry has not compliant stair to the tribal offices. The clinics is served with water and sewer from existing flush tank and haul water and wastewater systems for the village. Sinks are provided in the two exam rooms, toilet room, and the janitor room.

Clinic program usage information:

Patient records indicate that the clinic saw an average of 244 patients per month in 2000 up from 85 per month in 1998-99 and 26 patients per month in 1998. This is over a 100% increase on an annual basis. There are 3 full or part time staff and 1 Itinerant or contract staff equivalent. The office space provided is entirely inadequate as it has all office functions, travel, files, and use by all health aides. The room contains a desk, copier, fax, and two chairs for triage and other equipment and supplies.

Community Program Sheet:

The community program sheet P1.0 Services has been included if available on the next page. These sheets were completed during the Code and Condition Survey by ANTHC representative.

### C. Program Deficiency Narrative:

#### 1. Space Requirements and Deficiencies:

#### Space Comparison Matrix - Current Mekoryuk Actual SF to Denali Commission Medium Clinic Alaska Rural Primary Care Facility

Purpose / Activity	Current Clinic			Medium clinic			Difference		
	Actual Net SF			ARPCF SF					
		No.	Net Area (SF)	Size	No.	Net Area (SF)	Size	No.	Net Area (SF)
Arctic Entries			0	50	2	100			100
Waiting/Recep/Closet	64	1	64	150	1	150			86
Trauma/Telemed/Exam	138	1	138	200	1	200			62
Office/Exam	181	1	181	150	1	150			-31
Admin./Records			0	110	1	110			110
Pharmacy/Lab	72	1	72	80	1	80			8
Portable X-ray			0			0			0
Specialty Clinic/Health Ed/Conf			0	150	1	150			150
Patient Holding/ Sleeping Room	72	1	72	80	1	80			8
Storage	26, 25	2	51	100	1	100			49
HC Toilet	46	1	46	60	2	120			74
Janitor's Closet	46	1	46	30	1	30			-16
Subtotal Net Area			670			1270			600
Circulation & Net/Gross Conv. @ 45%			264			572			308
Subtotal (GSF)			934			1842			908
Mechanical Space @ 8%			36			147			111
<b>Total Heated Space</b>			970			1989			1019
Morgue (unheated enclosed space)				30	1	30			30
Ext. Ramps, Stairs, Loading	As Required			As Required			As Required		

- Overall space deficiencies: The size of the facility is about 1019 sf short of the ARPCF space requirements.
- Specific room deficiencies: There is no vestibule, small waiting space, minimal office and storage space, minimal exam space, and minimal offices. This in combination with other small spaces leaves the clinic very program deficient.
- Other size issues: Mechanical room is very small, and there are no unheated or exterior storage areas, and circulation is through rooms such as office/exam room to get to main exam room.

#### 2. Building Issues:

- Arctic Entries - The main entry does not have a vestibule and is not accessible for ADA and is impossible to get a gurney into the room. It does not have a legal ramp. The rear entry has no vestibule, a stair, and access to the tribal offices and does not meet ADA or standards for gurney access.

- b. Waiting / Reception –The waiting area contains a couch for secondary patient use and has equipment and other items stored in the room.
- c. Trauma/Telemed/Exam – There is no trauma room that meets all aspects or requirements. There are two total rooms that are used for exam or some combination.
- d. Office / Exam – There are two exam rooms, both of which are crowded with equipment. One has the main office function included and the other is accessible only through the first exam/office room. There was no capability of putting a patient in a gurney in the exam spaces.
- e. Administration / Records – There is one office room space used for all administrative, records, scheduling, and other functions. It is very small.
- f. Pharmacy / Lab – There is not Pharmacy and medicines are stored in locked cabinets in the Administration room.
- g. Specialty Clinic / Health Education / Conference - This function is completed in the exam rooms. There is no special area.
- h. Patient Holding / Sleeping Room – There is a sleeping room and a rollaway bed for itinerant staff. The exiting does not meet code with window egress.
- i. Storage – Storage is inadequate and is an impediment to safety and the operation of this clinic. There is a lack of adequate storage for needed medical supplies, files, and equipment in this facility. There is minimal storage and mostly it is in the exam rooms. There is storage in hallway, entry, janitors, and mechanical rooms.
- j. HC Toilet Facilities – A single toilet room serves patients and clinic staff. Toilet room did not meet all of the ADA or UPC requirements. Entry door width was too narrow, and the toilet and sink lacked sufficient clearances and were of incorrect fixture type.
- k. Janitors Room – There is no exhaust air for the janitor's room as required by code. This room is used extensively as storage.
- l. Mechanical/Boiler room – The room is a small room for the furnace and systems. The access is via the shared kitchen. The furnace is in very poor shape and all of the heating system is in poor condition. There is not the required clearance to combustibles (entry door swing) or space as required by code
- m. Ancillary Rooms – There are no ancillary rooms as all space is used to maximum capacity including storage rooms, exam rooms, toilet rooms, office, waiting room, corridors, and vestibules.

### 3. Functional Design Issues

This facility is functionally inadequate for its intended use. The spaces do not meet the functional size requirement, access is non-compliant, and the ability to perform required medical functions within the facility is severely hampered by lack of storage.



#### 4. Health Program Issues

- a. Vestibule and comfort:  
The front door of the clinic is directly from the outside, which is inadequate to defer the heat loss. There is no ADA access or proper gurney access. The exam rooms are cold every time the door is opened and the cold air migrates into the clinic where patients are being attended.
- b. Medical/Infectious Waste  
This is being handled in a very basic method and is hampered by the small non-functional facility.
- c. Infection Control  
This is being completed with minimal long-term control due to lack of facilities. Floor materials are very worn out and replaced with multiple materials and sizes allowing for control problems. There are no rubber base materials, and wall and ceiling materials are also considerably lacking in cleaning ability. The exposed piping also provides very unsanitary conditions and impossible cleaning of the exam rooms.
- d. Insect and Rodent Control  
None noted or investigated
- e. Housekeeping  
The difficulty in cleaning and housekeeping in such a congested facility is understandable and is being done at the best level currently possible.

#### 5. Utilities

- a. Water Supply  
The city water is provided by the existing flush tank and haul system.
- b. Sewage Disposal  
Sewer system is provided by the flush tank and haul system .
- c. Electricity  
See Electrical Narrative.
- d. Telephone  
A single phone line services the clinic and is inadequate for current needs.
- e. Fuel Oil  
The fuel system is not adequate with some leaking having occurred around the existing above ground tank. There is not protection or containment for possible spilling.

### D. Architectural / Structural Condition

#### 1. Building Construction:

- a. Floor Construction:  
The floor is 2x12 joist over a 4 x 12 beams with treated post and pad foundation with 3 x 12 treated pad for foundation system. There is some settlement and heaving which has caused doors to stick and floor to be uneven. There is approximately 3 inches of differential in the floor elevations. There is batt insulation of the 2x12 joist space with 3/8" plywood soffit.
- b. Exterior Wall Construction:  
The walls are 2x6 construction at 24" oc with R-19 insulation. The sheathing is T-111 plywood siding painted and fiberglass batt insulation with vapor barrier and paneling plywood on the interior.
- c. Roof Construction:  
The roof is a full-span truss at 24" oc with plywood deck and metal roof. The insulation is R-38 batt insulation that is minimal in this climate and required upgrading to R-60.
- d. Exterior Doors:  
The exterior doors are residential metal but very deteriorated. They are in very poor shape and need replacement.
- e. Exterior Windows:  
Windows are of thermo-pane wood casement windows; require thorough rework and repainting for upgrade to useful life.
- f. Exterior Decks, Stairs, and Ramps  
There are no Arctic entries. The landing at the exterior door is deteriorating, and the stairs rise and run do not meet code. The ramp is steep and does not meet ADA and the handrails and landings do not meet code. The facility requires all new stairs, ramps, railings and landings.

2. Interior Construction:

- a. Flooring:  
The flooring is sheet vinyl and VCT over plywood. It has been replaced in many areas and is work out and covered with duct-tape in other areas. Entire replacement of sub-floor and finish is required to meet sanitary requirements.
- b. Walls:  
The interior walls are of 2x4 wood construction, with no sound insulation. The type of wall construction does not provide for patient privacy in any way. The finish is gypsum wallboard and in serious need of repair and repaint. There are many cracks in wallboard due to settlement and shifting building.
- c. Ceilings:  
The ceilings are gypsum wallboard as well and needing repair and repaint due to cracking as well.

- d. Interior doors:  
The interior walls are of hollow core wood construction that provides minimal construction durability and they are all in need of repair. Additionally, these doors are not acceptable for patient privacy and sound control. There has been floor shifting and most of the doors do not close properly.
- e. Casework:  
The upper casework is minimal and the lower casework is of very poor construction. Plastic laminate tops that do not fit to walls and are damaged. The sanitary issues are very significant with the counters being of such poor construction. Need full replacement.
- f. Furnishings:  
The furnishings are very old and worn. There is an old couch in the waiting room and a variety of mismatched and old desks, chairs, and tables for other use. The exam tables are older as well.
- g. Insulation:

Floor Insulation		R-16 to R-19
Wall Insulation	R-19	
Attic/Roof Insulation		R-38
Attic Ventilation		minimal to NONE
- h. Tightness of Construction:  
The building is of poor overall construction, with numerous leaks in construction system at doors, floor, roof, and sills.
- i. Arctic Design:  
The vestibules are non-existent, orientation is OK, and siting of the clinic requires additional fill.

### 3. Structural

- a. Foundations  
The foundation is post and pad over a gravel pad and is in poor structural condition. Pads have settled, walls are racked, and the building has floor level deviation and has substantial cracking on the interior. There not adequate hold down strapping and the bracing is loose or missing. In general the foundation needs substantial upgrade to new useful life or replacement.
- b. Walls and Roof:  
The walls and roof seem in relatively stable and adequate condition.
- c. Stairs, Landings, and Ramps  
These elements are in poor condition and need of replacement with signs of rotting and deterioration of structural elements.

## E. Mechanical Condition

- 1. Heating System
  - a. Fuel Storage and Distribution

The clinic's heating fuel oil storage tank is located adjacent to the building and not a minimum of 5 ft. as required by code. The 550-gallon storage tank does not have the proper venting, piping, or valving as required by code. Severe corrosion on the tank necessitates replacement.

b. Furnace

A single residential grade, oil-fired furnace provides heating for the entire clinic. The furnace is in fair condition to meet the heating needs of the Health Clinic. There is severe corrosion on the furnace stack and the vent assembly is in poor condition. There is not enough combustion air openings for the furnace which is against code. There are no additional heaters in the clinic to assist with heating. A large number of boxes, parts, equipment, etc. are stored in the furnace room making access for inspections, maintenance, and repair difficult.

c. Heat Distribution System

The furnace supply air duct distribution system is routed within the clinic space. The return air makes its way back to the furnace through the corridor. The supply air diffusers and return grille are located in the walls.

2. Ventilation System

a. System

There is no mechanical ventilation system. Ventilation is by operable windows. The windows do not open easily and as such do not provide effective ventilation.

b. Exhaust Air

A ceiling mounted exhaust fan services the toilet room. This fan is not operational or ducted outside, but is ducted into the attic space. The janitor's room is provided with an exhaust fan, but it also is ducted to the attic space. The kitchen range is not provided with a code required range hood and exhaust fan.

3. Plumbing System

a. Water System

The water system plumbing is typical 1/2" and 3/4" copper distribution piping to the clinic exam sinks and toilet fixtures. Two 100 gallon "Cowater" water holding tanks and booster pump provides the water needs of the clinic and city offices.

b. Sewer System

Two "Cowater" 120 gallon holding tanks provides the needs of the clinic & city offices.

c. Fixtures

The toilet room plumbing fixtures are not ADA approved or UPC code compliant for barrier free access. The janitor's sink is not provided with a code required vacuum breaker.

d. Water Heater

A water heater is not installed in the facility. No plumbing fixtures have hot water.

## F. Electrical Condition

1. Electrical Service

- a. Electrical service is overhead 120/240V 1 phase 3 Wire, Alaska Village Electric Coop. to a 100A combination meter / main. (GE SN 85312877).

- b. The electrical service has several problems including exposed USE cable feeding panel A, badly corroded enclosure, inside plate screws missing, not enough clearance for service drop (less than 2 ft), Telcom service drop is hitting the roof, the meter is too high at 7'-6" and is in a crowded location by the oil tank.
- 2. Power Distribution
  - a. There is one panel in the Clinic – Panel A. Panel A is a Sq. D QO type, rated at 150A MLO, with 30 circuits.
  - b. All of the branch wiring is NM cable (Romex).
  - c. Panel A has some problems which include needing blanks to seal off the cover, 10/3 abandoned in the panel, multiple wires under 5 circuit breaker lugs, 30/2 in tripped position,
- 3. Grounding System
  - Grounding of Electrical Equipment*
  - a. Building has multiple antennas none grounded. Antenna systems grounding electrode shall be connected to the power grounding electrode system (NEC 820-40(d)).
- 4. Exterior Elements
  - a. Exterior lighting is provided by incandescent flood lights. NM cable wiring is exposed. Does not have photocell or time clock controls.
  - b. 4 exterior power receptacle are installed. None have covers or are GFI. NEC 210-52(e).
- 5. Wiring devices
  - a. GFCI protection is required for receptacles installed in the bathrooms and outdoors. NEC 210-8(b).
  - b. Receptacles are residential grounding type, not hospital grade. NEC 517-18(b)
  - c. Interior device plates are non-metallic ivory decorator plates.
  - d. There are an inadequate number of receptacles. NEC 210-52(a) 210-60.
- 6. Lighting
  - a. Foot-candle measurements were taken and lighting levels are generally not adequate. Removed and or burned out lamps should be replaced.
  - b. The lighting is predominately 2x4 fluorescent T12 (4) lamp surface wrap troffers with two of the lamps removed. These fixtures should be upgraded to T8 with electronic ballasts for energy efficiency.
  - c. Light fixtures are in bad condition with missing, cracked and dirty lens. Many light fixtures are incandescent still.
- 7. Emergency System

- a. Exits in the building are not functional. Requirement: Means of Egress Identification "Exit Signs" Connected to emergency electrical system providing 1-1/2 hours of continuous illumination. (UBC 1003.2.8)
  - b. Egress Lighting. Emergency lights in the building are non-functional. Requirement: Means of Egress Illumination. To an intensity of not less than 1FC. (UBC 1003.2.9)
8. Fire Alarm System
  - a. The building had a manual fire alarm system at one time. It consisted of 2 pull stations, 2 bells. It is not functional and reported never worked.
  - b. The building has one battery-backed smoke detectors. Minimum protection should be provided by independent battery operated smoke detectors in each room. Smoke detectors should be interconnected and attached to building power. There should be audio/visual enunciators. ADA 4.28 and UBC 1105.4.5 Units and sleeping areas require visual alarm. (ADA 4.28.4) People do spend the night in this clinic. Restrooms, general usage areas, hallways, lobbies require audible and visual alarms (ADA 4.28) Also UBC 1105.4.5)
9. Telecommunication
  - a. The building is not wire for voice or data. 3 pairs enter the building furnished by United Utilities.
  - b. There in no telephone switch. There are outlets in the office and the exam rooms.
  - c. The building is not wired for computer local area network LAN Cat 5. (EIA/TIA)
10. Energy Management
  - a. Several areas have inefficient incandescent lighting. Many areas could use occupancy sensors for energy management. Exterior lighting could use photocell control.

## G. Civil / Utility Condition

1. Location of building
  - a. Patient Access  
Located in the relative center of the village for ease of access and seems to work fine. It is on the road to the airport which is an advantage.
  - b. Service Access  
Road access is provided to front and rear entry. Neither stair access to rear, nor ramp and stairs to front entry meet code access requirements. Ramps are excessively steep providing a slipping hazard in winter months.
  - c. Other Considerations:  
The facility is located on a lot with ability for expansion. This requires some filling in the long term for any expansion of the facility.
2. Site Issues
  - a. Drainage

Drainage from the site is adequate. There is a significant pad on which the building is constructed. Correction would include putting a new extended pad on the site prior to placing the post and pad system.

b. Snow

There does not appear to be a snow-drifting problem as the facility sits in the open.

3. Proximity of adjacent buildings

There are no adjacent buildings that would require 1 hr. exterior walls on both buildings to meet code. There is adequate space for any expansion on the current site.

4. Utilities

a. Water Supply

The existing flush tank and haul water supply provides adequate water for the facility.

b. Sewage Disposal

The existing flush tank and haul sewage disposal is provided.

c. Electricity

Power from Village system via overhead wire. See Photos

d. Telephone

Overhead phone with only one phone connection, requiring fax and phone on same line.

#### H. Existing Facility Floor Plan (Site Plans, New Clinic Plans, Regional Map):

We have attached drawings, as we have been able to identify, find, or create as part of this report. We have endeavored to provide all drawings for all the sites; however, in some cases exact existing site plans were not available. We have provided as indicated below:

A1.1 Existing Site Plan is attached if available

A1.2 Existing Facility Floor Plan is attached following.

A1.3 The Existing typical wall section is attached following as required by the report guidelines.

A2.1 The Addition to the Existing Facility as required to meet ARPCF Space Guidelines is attached following.

A3.1 The New Clinic Site plan is attached as proposed based on the community input.

A3.2 The New Denali Commission Clinic Floor Plan meeting the ARPCF Space Guidelines and proposed for this location is attached.

### **IV. Deficiency Evaluation**

#### A. Deficiency Codes:

The deficiencies are categorized according to the following deficiency codes to allow the work to be prioritized for funding. The codes are as follows:

**01 Patient Care:** Based on assessment of the facilities ability to support the stated services that are required to be provided at the site. Items required for the patients social environment such as storage, privacy, sensitivity to age or developmental levels, clinical needs, public telephones and furnishings for patient privacy and comfort.

**02 Fire and Life Safety:** These deficiencies identify areas where the facility is not constructed or maintained in compliance with provisions of the state mandated life safety aspects of building codes including the Uniform Building Code, International Building Code, The Uniform Fire Code, NFPA 101, The Uniform Mechanical and Plumbing Codes and The National Electrical Code. Deficiencies could include inadequacies in fire barriers, smoke barriers, capacity and means of egress, door ratings, safe harbor, and fire protection equipment not covered in other deficiency codes.

**03 General Safety:** These deficiencies identify miscellaneous safety issues. These are items that are not necessarily code items but are conditions that are considered un-safe by common design and building practices. Corrective actions required from lack of established health care industry safety practices, and local governing body code safety requirements. I.e. Occupational Safety Health Administration (OSHA) codes & standards.

**04 Environmental Quality:** Deficiencies based on Federal, State and Local environmental laws and regulations and industry acceptable practices. For example this addresses DEC regulations, hazardous materials and general sanitation.

**05 Program Deficiencies:** These are deficiencies that show up as variations from space guidelines evaluated through industry practices and observation at the facility site and documented in the facility floor plans. These are items that are required for the delivery of medical services model currently accepted for rural Alaska. This may include space modification requirements, workflow pattern improvements, functional needs, modification or re-alignment of existing space or other items to meet the delivery of quality medical services. (Account for new space additions in DC 06 below)

**06 Unmet Supportable Space Needs:** These are items that are required to meet the program delivery of the clinic and may not be shown or delineated in the Alaska Primary Care Facility Space Guideline. Program modifications requiring additional supportable space directly related to an expanded program, personnel or equipment shall be identified in this section; for example additional dental space, specialty clinic, storage, or program support space that requires additional space beyond the established program.

**07 Disability Access Deficiencies:** The items with this category listing are not in compliance with the Americans with Disabilities Act. This could include non-



compliance with accessibility in parking, entrances, toilets, drinking fountains, elevators, telephones, fire alarm, egress and exit access ways, etc.

**08 Energy Management:** These deficiencies address the efficiency of lighting, heating systems/fuel types and the thermal enclosures of buildings, processes, and are required for energy conservation and good energy management.

**09 Plant Management:** This category is for items that are required for easy and cost efficient operational and facilities management and maintenance tasks of the physical plant.

**10 Architectural M&R:** Items affecting the architectural integrity of the facility, materials used, insulation, vapor retarder, attic and crawlspace ventilation, general condition of interiors, and prevention of deterioration of structure and systems.

**11 Structural Deficiencies:** These are deficiencies with the fabric of the building. It may include the foundations, the roof or wall structure, the materials used, the insulation and vapor retarders, the attic or crawl space ventilation and the general condition of interior finishes. Foundation systems are included in this category.

**12 Mechanical Deficiencies:** These are deficiencies in the plumbing, heating, ventilating, air conditioning, or medical air systems, interior mechanical utilities, requiring maintenance due to normal wear and tear that would result in system failure.

**13 Electrical Deficiencies:** These are deficiencies with normal or emergency power, electrical generating and distribution systems, interior electrical and communications utilities, fire alarm systems, power systems and communications systems within a building that should be repaired or replaced on a recurring basis due to normal wear and tear that would otherwise result in system failure.

**14 Utilities M&R:** This category is used for site utilities for incoming services to facilities that are required for the building to be fully operational. Deficiencies may include sewer and water lines, water wells, water tanks, natural gas and propane storage, electric power and telecommunications distribution, etc.

**15 Grounds M&R:** Real property grounds components that should be replaced on a recurring basis due to normal wear and tear. Deficiencies with respect to trees, sod, soil erosion, lawn sprinklers, parking, bridges, pedestrian crossings, fences, sidewalks & roadways, and site illumination etc. are considerations.

**16 Painting M&R:** Any painting project that is large enough to require outside contractors or coordination with other programs.

**17 Roof M&R:** Deficiencies in roofing, and related systems including openings and drainage.

**18 Seismic Mitigation:** Deficiencies in seismic structural items or other related issues to seismic design, including material improperly anchored to withstand

current seismic requirements effect. The elements under consideration should include the cost incidental to the structural work like architectural and finishes demolition and repairs.

### **B. Photographs:**

We have provided photographs attached which are noted to describe the various deficiencies described in the narratives and itemized in the summary below. The photos do not cover all deficiencies and are intended to provide a visual reference to persons viewing the report who are not familiar with the facility.

We have included additional photos as Appendix B for general reference. These are intended to add additional information to the specific deficiencies listed and to provide general background information.

## C. Cost Estimate General Provisions

### 1. New Clinic Construction

- a. Base Cost: The Base Cost provided in Section VI of this report is the direct cost of construction, inclusive of general requirements (described below) and contingency for design unknowns (an estimating contingency). The base cost is exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis Bacon wages, regionally adjusted to Anchorage. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The Project Factors and Area Cost Factor are multipliers of the base costs.
  - General Requirements are based on Anchorage costs without area adjustment. It is included in the Base Cost for New Clinics. These costs are indirect construction cost not specifically identifiable to individual line items. It consists of supervision, materials control, submittals and coordination, etc. The general requirements factor has not been adjusted for Indian Preference.
  - The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned.
- b. Project Cost Factors
  - Equipment Costs for new medical equipment has been added at 17% of the cost of new floor space.
  - Design Services is included at 10% to cover professional services including engineering and design.
  - Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.
  - Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.
- c. Area Cost Factor: The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.
- d. Estimated Total Project Cost of New Building: This is the total estimated cost of the project, including design services. The construction contract will be work subject to Davis Bacon wages, and assumes construction before year-end 2002. No inflation factor has been applied to this data.

### 2. Remodel, Renovations, and Additions

- a. Base Cost: The Base Cost provided in the specific deficiency sheets is the direct cost of construction, exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis

Bacon wages, regionally adjusted to Anchorage. Most of the deficiency items do not constitute projects of sufficient size to obtain efficiency of scale. The estimate assumes that the projects are completed either individually, or combined with other similar projects of like scope. The numbers include moderate allowances for difficulties encountered in working in occupied spaces and are based on remodeling rather than on new construction costs. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The General Requirements, Design Contingency and Area Cost Factors are multipliers of the base costs.

- The cost of Additions to clinics is estimated at a unit cost higher than new clinics due to the complexities of tying into the existing structures.
  - Medical equipment is calculated at flat rate of approximately \$32 which is the same amount as used for Equipment for New Clinic Construction. It is included as a line item in the estimate of base costs.
- b. General Requirements Factor: General Requirements Factor is based on Anchorage costs without area adjustment. The factor is 1.20. It is multiplied by the Base Cost to get the project cost, exclusive of planning, architecture, engineering and administrative costs. This factor assumes projects include multiple deficiencies, which are then consolidated into single projects for economies of scale. The general requirements factor has not been adjusted for Indian Preference.
- c. Area Cost Factor: The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.
- d. Contingency for Design Unknowns (Estimating Contingency): The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned. The factor used is 1.15.
- e. Estimated Total Cost: This is the total estimated bid cost for work completed under Davis Bacon wage contracts, assuming construction before year-end 2002. This is the number that is entered in the front of the deficiency form. No inflation factor has been applied to this data.
- f. Project Cost Factors: Similar to new clinics, the following project factors have been included in Section VI of this report.
- Design Services is included at 10% to cover professional services including engineering and design.
  - Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.
  - Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.
- g. Estimated Total Project Cost of Remodel/Addition: This is the total estimated cost of the project including design services, the construction contract cost for work completed under Davis Bacon

wages and assuming construction before year-end 2002. No inflation factor has been applied to this data.

## V. Summary of Existing Clinic Deficiencies

The attached sheets document the deficiencies; provide recommendations on how to make repairs or accommodate the needs and provide a cost estimate to accomplish the proposed modifications. The summary addresses individual deficiencies. If all deficiencies were to be addressed in a single construction project there would be cost efficiencies that are not reflected in this tabulation.

These sheets are reports from the Access Data Base of individual Deficiencies that are compiled on individual forms and attached for reference.

Refer to Section VI. New Clinic Analysis for a comparison of remodel/addition to new construction.

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## VI. New Clinic Analysis

The analysis of whether a new clinic is required is based on the Denali Commission standard of evaluation that "New Construction is viable if the cost of Repair/Renovation and Addition exceeds 75% of the cost of New Construction".

We have therefore determined the cost of a New Clinic Construction to meet the Alaska Rural Primary Care Facility (ARPCF) Space Guidelines for the size of village. We have also determined the cost to Repair/Renovation and Addition to the existing Clinic to meet the same ARPCF Space Guidelines.

A. The cost of a New Denali Commission 2000 SF Medium Clinic in Mekoryuk is projected to be:

• Base Anchorage Construction Cost per sf.		\$183
• Project Cost Factor:	@ 45%	\$ 82
Medical Equipment	17%	
Construction Contingency	10%	
Design Fees	10%	
Construction Administration	8%	
• <u>Multiplier for Village</u>	<u>@ 1.70</u>	<u>\$186</u>
Adjusted Cost per SF		\$451
<hr/>		
<b>Projected Cost of a New Clinic:</b>	<b>2000 sf. X \$451</b>	<b>= \$902,000</b>

B. The cost of the Repair/Renovation and Additions for the existing Clinic are projected to be:

• Code & Condition Repairs/Renovations		
Cost from Deficiency Summary		\$566,120
• Remodel/Upgrade work (See Def. Code 01)		
100% of clinic 970 SF = 970 SF @ \$137/SF		\$132,876
• Additional Space Required by ARPCF – (See Def. Code 06)		
○ Base Anchorage Cost		\$226
Medical Equipment		\$ 32
Additional Costs –		\$ 98
General Requirements	20%	
Estimation Contingency	15%	
○ <u>Multiplier for Village</u>	<u>@1.70</u>	<u>\$107</u>
Adjusted Cost per SF		\$603
Total Addition Cost of 1030 SF @ \$603		\$620,742
• Project Cost Factor:	@ 28%	\$369,527
Construction Contingency	10%	
Construction Administration	8%	
Design Fees	10%	
<hr/>		
<b>Total cost of remodel/addition</b>		<b>\$1,689,265</b>

C. Comparison of Existing Clinic Renovation/Addition versus New Clinic:

**Ratio of Renovation/Addition versus New Clinic is:**

$$\text{\$1,689,265 / \$902,000} = 1.87 \text{ x cost of New Clinic}$$

Based on Denali Commission standard of evaluation; the remodel/addition costs are more than 75% of the cost of new construction. A new clinic is recommended for this community.

\* Note: Village factors may have been adjusted for recent 2001 cost adjustments and may have changed from previously published data distributed to the villages.

D. Overall Project Cost Analysis:

The overall project cost analysis below incorporates land, multi-use, utility costs, and road access costs, and project management fees if any are associated with the project.

Item	Quantity	Units	Unit Cost	Area Adjustment Factor	Total Cost	Allowable under "Small" Clinic Process (yes/no)
Primary Care Clinic (Allowable)	2000	SF	\$265.00	1.7	\$902,000	yes
Clinic (Non-allowable portion)	0	SF	\$265.64	1.7	\$0	no
Land	15,000	SF	\$2.00	1	\$30,000	yes
Multi-Use Facility Design Cost	0	LS	\$0.00	1	\$0	yes
Multi-Use Facility Construction Cost	0	LS	\$0.00	1	\$0	no
Utility Extension/Improvements	1	LS	\$15,000	1	\$15,000	yes
Road access & parking lot improvements	1	LS	\$5,000	1	\$5,000	yes
Subtotal Project Cost					\$952,000	
Project Management Fees					<u>Unknown</u>	
<b>Total Project Cost</b>					<b>Unknown</b>	



## **VII. Conclusions and Recommendations**

The existing Mekoryuk Clinic has served the community well for many years. Base on current ANTHC and YKHC delivery model for health care to rural Alaska, the facility is not adequate in size or in condition to meet these needs. The existing structure could be adapted for many other less clinical and medically stringent uses without extensive remodeling.

After careful review it is the recommendation of the consultant team that a new Denali Commission 2000 SF Medium Clinic be considered for Mekoryuk. The addition of approximately 1030 sf of clinic space required by the current ARPCF Program Space Guidelines and the major renovation and upgrading of the existing clinic space will cost 1.87 times the cost of a new clinic. This results in the recommendation of a new clinic for this village.

We reviewed the options with the local community leaders the consensus was that the New Medium Clinic would meet the current community needs and for years to come. In addition, they agreed that there is an ideal site that is available for construction of a new clinic adjacent to the washeteria. The site is adjacent to all existing community utilities.

The community believes this is a good solution and will produce the best return for funds invested in a clinic that meets the needs of Mekoryuk Community and is aggressively moving to assist in any way to accomplish this goal.

## **Appendix A: Specific Deficiencies Listings**

The attached sheets represent the individual deficiencies identified for this project and the corrective action required to meet current codes and standards of construction. The deficiencies are further summarized in Section V. Summary of Existing Clinic Deficiencies.